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Heart Failure

ELEVATED LEVELS OF HEPATOCYTE GROWTH FACTOR DISTINGUISH CARDIAC AMYLOID FROM LEFT VENTRICULAR HYPERTROPHY AND DIASTOLIC HEART FAILURE

ACC Moderated Poster Contributions
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Session Title: What's New in Cardiac Amyloidosis and Dilated Cardiomyopathy
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Background: Elevated levels of Hepatocyte Growth Factor (HGF) have been observed in patients with systemic amyloidosis but little is known about HGF and other biomarkers in patients with cardiac amyloid. We hypothesized that HGF levels can discriminate patients with cardiac amyloid from those with left ventricular hypertrophy (LVH) and diastolic heart failure (DHF) who are morphologically indistinct on echocardiography (echo).

Methods: Serum HGF was measured and echo features were assessed in 17 patients with cardiac amyloid, 17 patients with LVH on echo, and 18 patients with diastolic heart failure enrolled in an outpatient registry. Cardiac amyloid was diagnosed by biopsy (9/17) or cardiac magnetic resonance imaging (8/17).

Results: Clinical, echo, and HGF data are presented in Table 1 (mean ± SD). There were no echocardiographic differences among the three groups in terms of LV size and function and LA size. HGF was significant elevated in patients with cardiac amyloid.

Table 1. Clinical, Echocardiographic, and HFG Data

Measurement	Amyloid (n = 17)	LVH (n = 17)	DHF (n = 18)	p value
Age, years	61.3 ± 9.9	59.7 ± 13.9	64.4 ± 17.0	NS
Sex, % male	67	61	28	
LV Ejection Fraction, %	52.0 ± 14.8	58.2 ± 9.6	60.2 ± 8.8	NS
Interventricular septum thickness, cm	1.5 ± 0.4	1.6 ± 0.6	1.7 ± 0.4	NS
End-diastolic dimension, cm	4.3 ± 0.4	4.5 ± 0.9	4.7 ± 0.9	NS
End-systolic dimension, cm	3.1 ± 0.5	3.0 ± 1.0	3.1 ± 1.1	NS
Left atrial dimension, cm	4.3 ± 0.6	4.5 ± 0.7	4.6 ± 1.0	NS
HGF, pg/mL	2097 ± 5424	165.1 ± 58.4	162.4 ± 65.0	< 0.001 for amyloid vs. LVH < 0.001 for amyloid vs. DHF = 0.7 for LVH vs. DHF

Conclusions: HGF is markedly elevated in patients with cardiac amyloidosis and may help diagnose cardiac amyloidosis in patients with LVH and DHF who are echocardiographically indistinct. These findings suggest that measurement of HGF can be confirmatory for the diagnosis of cardiac amyloid and may minimize the need for invasive or extensive testing.